

Distant Comet Imaging with the Keck and the HST

K. J. Meech, O. R. Hainaut and J. Bauer (IfA-UH)

As part of our program to observe the cessation of activity in selected distant comets, we obtained observations of comet C/1987 H1 (Shoemaker 1987o) and C/1984 K1 (Shoemaker 1984f) using the LRIS instrument on Keck-I on 1995 January 2 UT, when the comets were at heliocentric distances, r of 18.7 and 22.5 AU, respectively. A total of 17,300 sec of integration were obtained on Shoemaker 1987o through the R filter, but only 2,400 sec were obtained on Shoemaker 1984f owing to scattered light from bright field stars. Preliminary reductions indicate that the dust coma/tail of Shoemaker 1987o is still present extending to $> 5 \times 10^5$ km at PA 80 degrees.

Observations of comet Shoemaker 1987o were obtained with the WFPC2 camera on HST on 1995 December 6, at $r = 20.4$ AU, and of Shoemaker 1984f at $r = 24.1$ AU. We obtained 26,000 sec and 22,100 sec of integration on these comets, respectively. The final cleaned comet images will be presented, and limits on possible nucleus sizes and activity at these large distances will be presented in the context of our distant comet observing program database.

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Paper presented by Karen J. Meech

Institute for Astronomy
University of Hawai'i
2680 Woodlawn Drive
Honolulu HI 96822 USA
Phone: 808-956-6828
Fax: 808-956-9580
Email: meech@IfA.hawaii.edu

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